City of Rockville
Recreation and Parks Department
2012 White-tailed Deer Management Report

I. BACKGROUND

Rockville's original White-Tailed Deer Control Policy (WTDCP) was established in 1995. The policy was developed because residents were concerned about the rising white-tailed deer population and its impact on landscaping and gardens. At that time, the issue was seen more as a nuisance than a problem with deer over-population. The 1995 Policy was one of tolerance and coexistence.

In 2009, due to an increased number of incidents related to deer, the Mayor and Council formed a White-Tailed Deer Task Force (WTDTF). The task force was charged with studying and analyzing current white-tailed deer population data and impacts, including the methods and local practices used by neighboring jurisdictions to manage the deer population.

The recommendations from the WTDTF were adopted as follows:

1. Adopt the revised White-Tailed Deer Management Plan.

2. Develop a database to track deer vehicle incidents. Use this data to map locations deer are killed or injured. Map should identify specific roadway locations. This data shall be analyzed and used by City staff when developing deer management activities for any given year.

3. Conduct flyovers using infrared technology to accurately portray the current white-tailed deer population in Rockville. Fund these yearly counts to take place during the winter months. The estimated cost is $7,500 per year. The flyovers should be coordinated with the Maryland National Capital Park and Planning Commission. This data shall be analyzed and used by City staff when developing deer management activities for any given year.

4. Research traffic control devices related to deer crossings. Seek options of fencing or other possible methods to control deer where they cross significant roadways with high traffic and speeds.

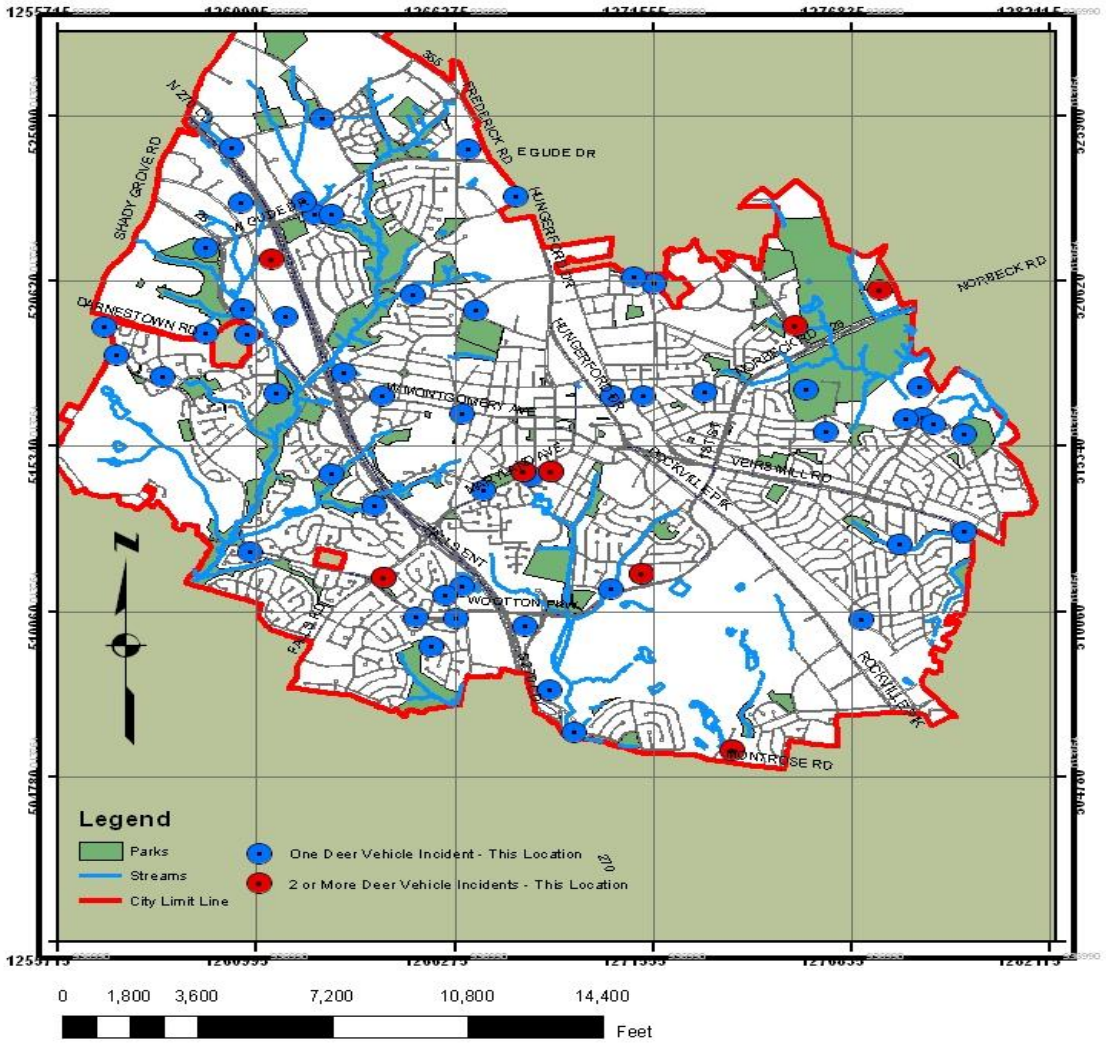
5. Implement a public information campaign to better inform the public about deer, their benefits and impacts to urban areas. Provide ecological, biological and cultural information through all current media, including Rockville Reports, City of Rockville Web site and links to other agencies.

II. 2012 ACCOMPLISHMENTS

a) Deer Vehicle Incident Reports

Deer vehicle incidents continue to be tracked by location. Dead deer found in the right-of-way are reported to the Animal Control Division of the City's Neighborhood Services Department. In 2012, these reports were closely monitored, with more specific adjacent addresses provided where available. See map below. The number of dead deer reported in 2012 was 110. This data is included in table two, which includes the years 2008 – 2012.

City of Rockville
2012
Deer Vehicle Incident Locations & Additional White-tailed Deer Data



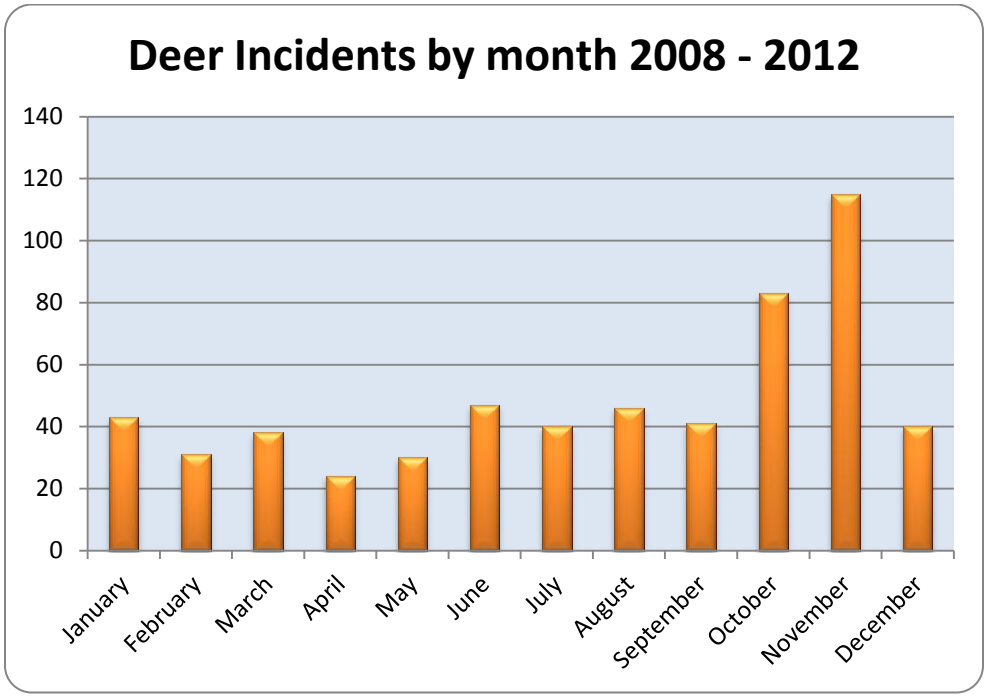


Table 1

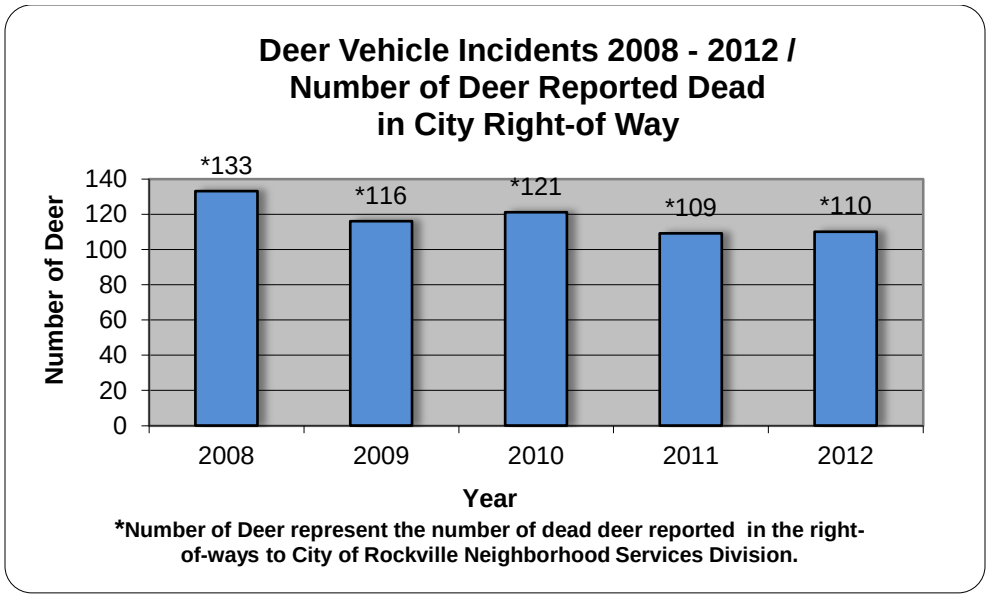


Table 2

b) Estimated White-tailed Deer Population Counts

From 1997 to 2002, the City conducted forward-looking infrared surveys (FLIR) in order to estimate White-tailed deer population densities. The White-tailed Deer Task Force recommended continuing yearly counts to determine current population densities and trends specific to the Rockville urban forests. In more recent years a method for conducting population counts by means of "game camera surveys" was developed at

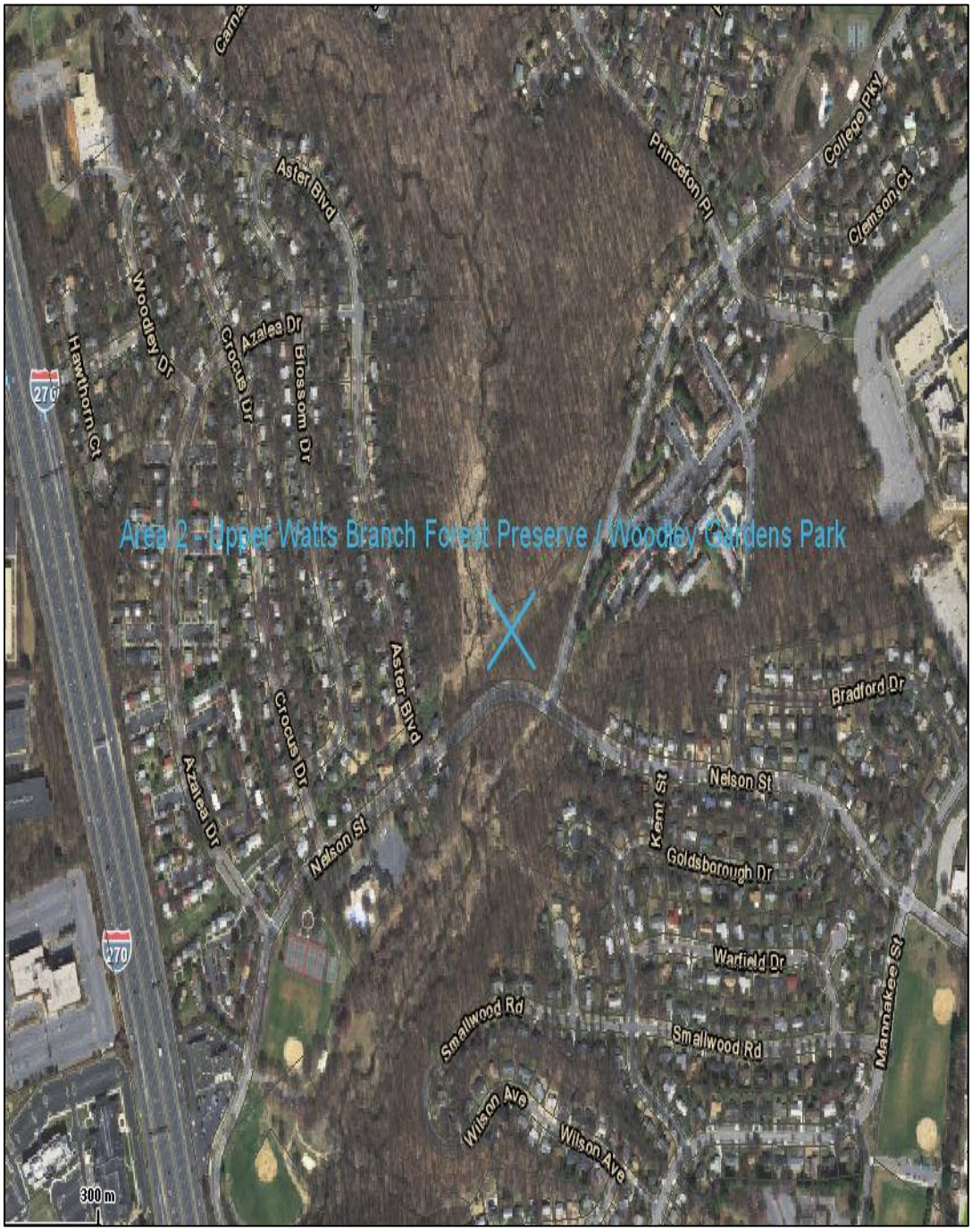
Mississippi State University. The formula is based on the number of unique bucks photographed over a 5 day period. Calculations are used to estimate deer population in a 100 acre size plot and per square mile (See Attachment A). However, some limitations are assumed when surveying areas less than one square mile.

In 2012, Population estimates were established using game camera surveys for the following two areas;

- Area 1 – Civic Center Park – Total area of park = 153 acres

AREA 1 – CIVIC CENTER PARK AUGUST 2012		
1	Buck Photos	55
2	Individual Bucks Identified	9
3	Doe Photos	68
4	Fawn Photos	9
5	Individual Bucks / Total Bucks	0.17
6	Total Bucks	9
	Total Does 68 x .1636	11
	Total Fawns 9 x .1636	1
	100% CAPTURE TOTAL	**21**
7	Bucks	11.25
8	Does	13.90
9	Fawns	1.84
10	**Total Population** (7 + 8 + 9) given 80% were captured by photos	**27**
11	Deer per 100 acres	27
12	Deer per acre	0.27
13	Deer per square mile (640 acres)	172.8
ESTIMATED POPULATION RANGE = 21 - 27 PER 100 ACRES OR 134 - 173 PER SQ. MILE		

Area 2 – Upper Watts Branch Forest Preserve / Woodley Gardens Park
Total area of parks = 116 acres



AREA 2 – UPPER WATTS BRANCH PARK / WOODLEY GARDENS PARK JANUARY/FEBRUARY 2013		
	TOTAL DEER PHOTOS	
1	Buck Photos	86
2	Individual Bucks Identified	9
3	Doe Photos	83
4	Fawn Photos	2
5	Individual Bucks / Total Bucks	0.10
6	Total Bucks	9
	Total Does 83 x .1047	9
	Total Fawns 2 x .1047 (fawns may be reflected in other totals . 1 is assumed for count)	1
	100% CAPTURE TOTAL	19
80% of Deer Photographed factor 1/ .8 = 1.25 applied to deer photographed totals above (3, 4, 5) = 7, 8, 9, below		
7	Bucks	11.25
8	Does	10.86
9	Fawns	0.26
10	**TOTAL POPULATION** (7 + 8 + 9)	22.37
11	Deer per 100 acres	22.37
12	Deer per acre	0.22
13	Deer per square mile (640 acres)	143.16
ESTIMATED Population Range = 19 - 23 per 100 acres or 120 - 143 per Sq. Mile		

Area 1 Photograph Aug/ Sept 2012

AREA 2 Photograph Jan/ Feb 2013

Maryland National Capital Park and Planning Commission (MNCPP&C)
Rock Creek Stream Valley Unit 7 Whitetail Deer Population Estimates

During August – September 2010, Maryland National Capital Park and Planning Commission ran a 12 day deer population survey. The survey was conducted in Rock Creek Stream Valley Park in the area located between Norbeck Rd and Veirs Mill Rd. This area is directly adjacent to the Civic Center Park.

The survey consisted of 5 camera stations that covered an estimated 500 total acres of land; of which 325 acres were parkland. After a 5 day pre-bait period, 5 camera stations, each consisting of a single Infrared-triggered camera aimed over corn bait, were established. The cameras were in use for 12 consecutive days with re-baiting occurring once every 3-4 days. Photo data analysis consisted of identifying and counting the total number of bucks, unique bucks, does, and fawns (either sex) at each station. Each photograph is considered a separate event. Thus an individual deer photographed in separate photos is counted one time for each photograph it is in. Utilizing a population factor determined by comparing the number of unique bucks versus the total number of bucks pictured, estimates of population size were made. These estimates were calculated

at 100%, 90%, and 80% capture rates. It is assumed that bucks, does, and fawns all have an equal probability of capture. Estimations of buck to doe ratios and of fawn to doe ratios were also calculated.

Survey results estimated a deer population size ranging from 85 to 104 deer per square mile. The buck to doe ratio was estimated to be approximately 0.9 bucks per doe. The fawn to doe ratio was estimated to be approximately 0.85 fawns per doe.

In 2008, a similar 16 day camera survey was conducted in the same location. The estimated deer population ranged from 97 to 121 deer per square mile. The buck to doe ratio was estimated to be approximately 0.71 bucks per doe. The fawn to doe ratio was estimated to be approximately 0.42 fawns per doe.

The map of Rock Creek Stream Valley Unit 7 can be found as Attachment B

c) Research of traffic control devices and fencing

In December of 2012, fencing along Wootton Parkway was explored as a result of resident's request. The resident was concerned about the number of deer crossing Hurley Ave. and Wootton Parkway. Most of Wootton Parkway has deer habitat adjacent to the right of way, including City owned parkland, Lakewood Country Club, Woodmont Country Club, Wootton High School and several other smaller forested areas.

Fencing to prevent deer from crossing Wootton Parkway was determined to be not practical. Adding deer crossing signs was explored as an alternative. Warning signs were placed in 4 locations.

1. Wootton Parkway @ Greenplace Terrace
2. Wootton Parkway @ Hurley Avenue
3. Hurley Avenue @ Wootton Parkway
4. Hurley Avenue @ Dundee Road

d) Monitoring of managing deer populations with birth control methods

The City continues to monitor methods for controlling deer populations including the use of deer birth control products, such as GonaCon and PZP. In response to a recent Washington Post Opinion article regarding deer contraception, a memorandum was sent to the City Manager highlighting the products (See Attachment C).

e) Participation in the Montgomery County Deer Management Work Group (MCDMWG)

City staff represented Rockville at several MCDWG meetings in 2012 and participated in deer camera surveys conducted by Maryland National Capital Park and Planning.

The MCDMWG meets annually and includes professionals from Maryland National Capital Park and Planning Commission, Maryland Department of National Resources, The National Park Service, Montgomery County Cooperative Extension Service,

Montgomery County Police Department, USGS Biological Services Division, Patuxent Wildlife Research Station and the Washington Suburban Sanitary Commission.

This group coordinates and develops deer management actions throughout Montgomery County. This group of experts will annually review management techniques for the City. The MCDWG replaces the WTDTF. Any management techniques proposed for Rockville would be included in the Montgomery County Annual Report. This will ensure that Rockville is using techniques that are consistent with other activities within the County and are based on the best available science. The City will benefit from the years of experience and expertise of this group.

III. 2013 GOALS

The following goals are set for 2013:

1. The City will continue to educate and provide public information via an annual report, Rockville Channel 11 and The City's web page.

2. Produce an informative deer brochure for distribution at City facilities.

3. Conduct additional game camera surveys in Wootton's Mill Park, Dogwood Park/ Cabin John Forest Preserve, Potomac Woods Park and Montrose Woods Park.

4. Continue to evaluate and respond to residents requests.

Attachment A

RESEARCH ADVANCES
December 2000 Vol. 5, No. 3

Research conducted by
Stephen Demarais
William McKinley
Harry Jacobson

MISSISSIPPI STATE UNIVERSITY

For more information contact:
Don L. Kerr
Interim Director
Forest & Wildlife Research Center
Box 9680
Mississippi State, MS 39762

662-325-2052
Fax: 662-325-8726
dkerr@cfr.msstate.edu
http://www.cfr.msstate.edu

Keith Bratcher, Editor

FWRC-WF-163

Deer Camera Survey Procedures

RECOMMENDATIONS

How best to implement a camera survey depends on the information needs. If pre-season photographs of bucks is a primary objective of the survey, then fall would obviously be the appropriate time. Accurate estimates of deer density and sex ratio can be obtained in either pre- or post-season. However, for best estimates of population characteristics, camera surveys should be conducted in winter at a density of 1 camera per 100 acres.

Camera stations should be selected carefully and pre-baited for 4-5 days. Set cameras on a 10-minute delay and operate for no less than 5 consecutive days. Operating cameras for up to 10 days can significantly improve results, especially if individual buck photographs are an important objective. Increase the estimated deer population based on the accuracy values presented in Figure 1. For example, results of a 7-day winter survey with a camera per 100 acres should be increased by a factor of 1.25 due to the 80% accuracy. If camera numbers are limited, rotate each camera to a new station after each survey period for up to 4 stations per camera. However, cameras should be dispersed over the entire area for each survey period.

The infrared-triggered camera method offers a practical option for surveying deer populations. It may not provide all the answers needed, but it is an exciting new tool that can be used in conjunction with other deer data collection techniques. It is guaranteed to add a new level of knowledge and element of excitement to the experiences associated with deer management and hunting.

"HOW TO CONDUCT A CAMERA SURVEY"

- Depending on desired accuracy, grid the property into 100- or 200-acre compartments. Locate a bait site with high deer use near the center of each compartment and clear vegetation within a 10' radius.
- Select a tree or install a post 12-15' from the center of the circle and set the camera facing either north or south to avoid sun glare. Pay special attention to the "view" of the camera and remove obstructions. A numbered sign in the view identifies the site.
- Pre-bait each site for 5 days with 30-40 pounds of corn in the center of the circle and check daily. Notify your local Conservation Officer that a deer survey is being conducted.
- Set the camera to record date and time with a 10-minute delay between pictures.
- Set the monitor so the beam is aimed 20-30 inches above the bait to eliminate unwanted photos of raccoons and other small animals.
- Operate cameras 5-10 days depending on budget and desired accuracy. Check cameras daily. If possible, replacing film as needed. Use 200 ASA print film with either 24- or 36-exposure rolls depending on animal activity and frequency of checking cameras.
- Analyze the photos to determine total number of photos each of bucks, does, and fawns and the number of individual bucks. Do not include unidentifiable deer.

SAMPLE SURVEY CALCULATIONS

Acres surveyed = 1,000
Camera sites = 10 with 1 camera per 100 acres
Consecutive survey days = 7

Total photographs of deer = 490
Buck photos = 120
(individual bucks identified = 35)
Doe photos = 230
Fawn photos = 140

Use the relationship of the number of unique bucks (35) to the total number of bucks photographed (120) to calculate a *population factor*.

35 / 120 = .29

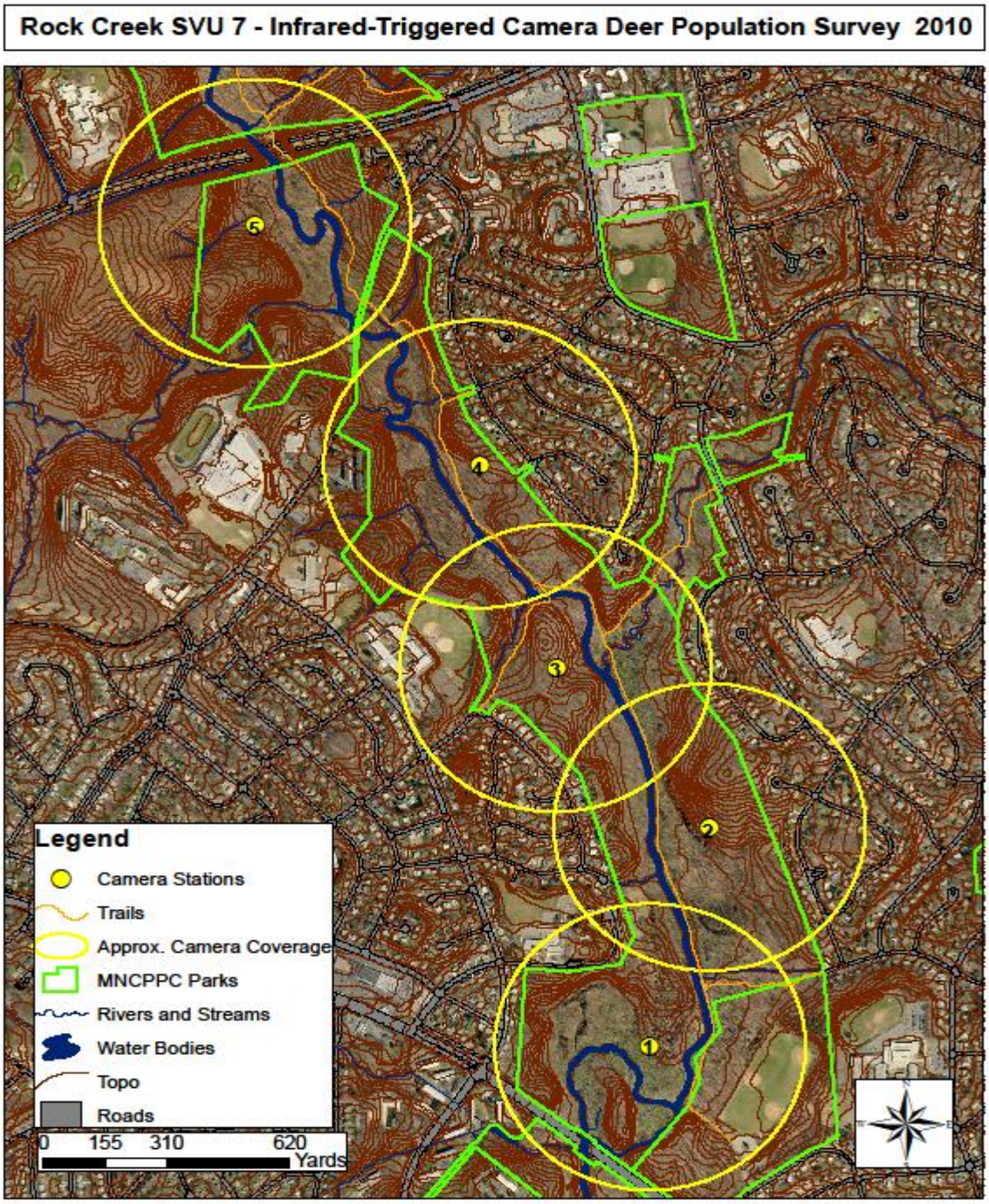
From Figure 1, 80% of deer are photographed after 7 days, so adjust by an extrapolation factor of 1/.8 = 1.25

Estimates of population characteristics:

Bucks	=	35 x 1.25 = 44
Does = 230 x .29	=	67 x 1.25 = 84
Fawns = 140 x .29	=	41 x 1.25 = 51
Total population =		**179**

Acres per deer = 1,000/179 = 5.6
Buck to Doe ratio = 35:67 = 1:1.9
Fawn crop = fawn/doe = 41/67 = .61 or 61%

Attachment B



Map and corresponding Information provided by Maryland National Capital Park and Planning Commission.

AttachmentC

City of Rockville

MEMORANDUM

February 22, 2013

TO: Barbara Mathews, City Manager

FROM: Mark Kibiloski, Parks and Facilities Admin. Supervisor
Steve Mader, Superintendent of Parks and Facilities

SUBJECT: Washington Post Opinion article on Deer Contraception

ARTICLE

The article that appeared in the February 1, 2013 Washington Post's Opinion section entitled *Don't Kill The Deer In Rock Creek Park*, discussed the use of two fertility treatments (PZP –porcine zona pellucida and GonaCon) used to control wildlife populations . Both products are methods that have been discussed and reviewed extensively by the City of Rockville White-Tailed Deer Task Force.

The following is a synopsis of the general information provided to the task force.

BACKGROUND

In 2011 the State of Maryland became the first state to approve the use of GonaCon, a deer birth control product. GonaCon is an immune-contraceptive for deer that has federal approval. It was developed by the U.S. Department of Agriculture and is registered with the Environmental Protection Agency. According to the Maryland Department of Natural Resources (MD-DNR) GonaCon has the following limitations;

1. Cost per deer is approximately $1,000. The deer must first be shot with a dart gun and tranquilized.
2. Deer must be tagged and identified as not consumable by humans.
3. Applicators must be registered, tested and associated with a licensed veterinarian.
4. GonaCon works on 80% of the deer injected. The following year however 50% of the deer must be injected again.
5. GonaCon has very limited use in terms of day to day deer management. It would not be used in 98% of the state.
6. For GonaCon to be successful in Maryland, 80,000 deer would need to be captured and treated.

The Humane Society of the United States anticipates advances in the chemical make-up and delivery system that will lessen the manpower and cost involved in applying GonaCon. The goal is to have a product that would allow the applicator to dart the deer without capturing the animal. GonaCon could become a viable tool in a comprehensive deer management tool box.

PZP (porcine zona pellucida) has been used in many research projects throughout the United States, including use at the National Institute of Standards and Technology in Gaithersburg, Maryland. At the time of the task force PZP had not been federally approved for use in wild, free-ranging populations of white-tailed deer.

According to the Humane Society PZP is:

1. Administered by shooting the deer with a dart.
2. Safe for deer and for predators, scavengers and any humans who happen to consume venison from a treated deer.
3. A natural protein that degrades in the deer's body after injection, and if eaten, it is destroyed in digestion.
4. Used in several locations throughout the United States.

Concerns from the MD-DNR included:

1. All of the "success" stories were either on isolated islands or locations where the deer are contained by fences.
2. The vaccine is currently only approved for research.

RECOMMENDATION

The task force recommended continuing to monitor and review advances made with regards deer contraceptives, in particular with GonaCon and PZP, and other similar products as they become available.

The Recreation and Parks Department staff participates in the Montgomery County Deer Management Work Group (MCDMWG). The group meets annually to review deer management options and recommendations for Montgomery County. The group includes professional deer managers from around the state, including the MD-DNR. The MD-DNR has committed to continue to monitor the development of deer contraceptives and cooperate on future studies as they are proposed and as funding is available. Through our continued participation, the City will be made aware of any advances in the area of contraceptive studies. Staff recommends the City continue to participate on the MCDMWG. The expertise in evaluating the use of contraceptives should be left to the MD-DNR and the City should ultimately follow their recommendations.

Cc: Chris Henry, Acting Director of Recreation and Parks